

CLAIMS

1. A system (1, 3, 4) for influencing the rheological properties of a conveyable material, in particular a pourable or pasty product or a loose material, wherein the system is or can be allocated to a machine for machining or processing the conveyable material (M), in which the conveyable material is transported along a conveying direction (F), characterized in that the system consists of:
  - a) at least one controllable impact system (1; 11, 12, 13) for generating and introducing mechanical oscillations in the material (M) in at least one machining section (2) of the machine, along with
  - b) at least one acquisition system (3; 4; 14, 15; 21, 22, 23) for acquiring the rheological properties of the material (M); wherein
  - c) the acquired rheological properties are used as the basis for actuating the impact system (1; 11, 12, 13) for generating and introducing the mechanical oscillations.
2. The system according to claim 1, characterized in that the acquisition system has a first means (21) for determining the velocity field transverse to the conveying direction (F) in an area of the material, and a second means (22, 23) for determining the pressure difference along the conveying direction (F) in the area and/or at the edge of the area of the material.
3. The system according to claim 1, characterized in that the acquisition system has a first means (21) for determining the velocity field transverse to the conveying direction (F) in an area of the

material, and a second means (24) for determining the shearing stress along the conveying direction (F) at the edge of or inside the area of the material.

4. The system according to one of claims 1 to 3, characterized in that it has several impact systems (1; 11, 12, 13) for mechanical oscillations.
5. The system according to one of claims 1 to 4, characterized in that the at least one impact system (1; 11, 12, 13) for mechanical oscillations can be actuated independently of the operating status of the machine.
6. The system according to one of claims 1 to 5, characterized in that several impact systems (1; 11, 12, 13) for mechanical oscillations can be actuated separately from each other.
7. The system according to one of claims 1 to 6, characterized in that a first acquisition system (3) for acquiring the rheological properties of the conveyable material is arranged downstream from the machining section (2) in order to generate first signals (S11, S12, ..., S1n), which characterize the physicochemical, in particular rheological properties of the material downstream from the machining section (2).
8. The system according to one of claims 1 to 7, characterized in that a second acquisition system (4) for acquiring the rheological properties of the conveyable material is arranged upstream from the machining section (2) in order to generate second signals (S21, S22, ..., S2n), which

characterize the physicochemical, in particular rheological properties of the material upstream from the machining section (2).

9. A machine according to one of claims 7 or 8, characterized in that the first signals (S11, S12, ... S1n) and/or the second signals (S21, S22, ..., S2n) are compared with respective reference values (R11, R12, ..., R1n), which characterize specific rheological properties, wherein feedback takes place within a control circuit (5) as a function of the result from comparing the signals to activate the at least one impact system (1; 11, 12, 13) for mechanical oscillations.
10. The machine according to one of claims 7, 8 or 9, characterized in that the first signals (S11, S12, ... S1n) and/or the second signals (S21, S22, ..., S2n) are compared with each other, wherein feedback takes place within a control circuit (5) as a function of the result from comparing the signals to activate the at least one impact system (1; 11, 12, 13) for mechanical oscillations.